

Debugging your JavaScript

AKA: Oh crap what
went wrong?

Who am I?

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- Senior Developer Evangelist @ Adobe
- @cfjedimaster
- I make bugs for a living

So, um, we have a
problem

It isn't the bugs

9/9

0800 Arctan started
 1000 stopped - arctan ✓ { 1. 2700 9.032847 025
 13⁰ 0C 03W MP - MC 2. 130476415 (23) 4.615925059 (-4)
 03S PRO 2 const 2. 130476415
 const 2. 130676415

Relays 6-2 in 03S failed special speed test
 in relay 10.0W test.

1100 Started Relay's changed
 1525 Started Cosine Tape (Sine check)
 Started Multi. Adder Test.

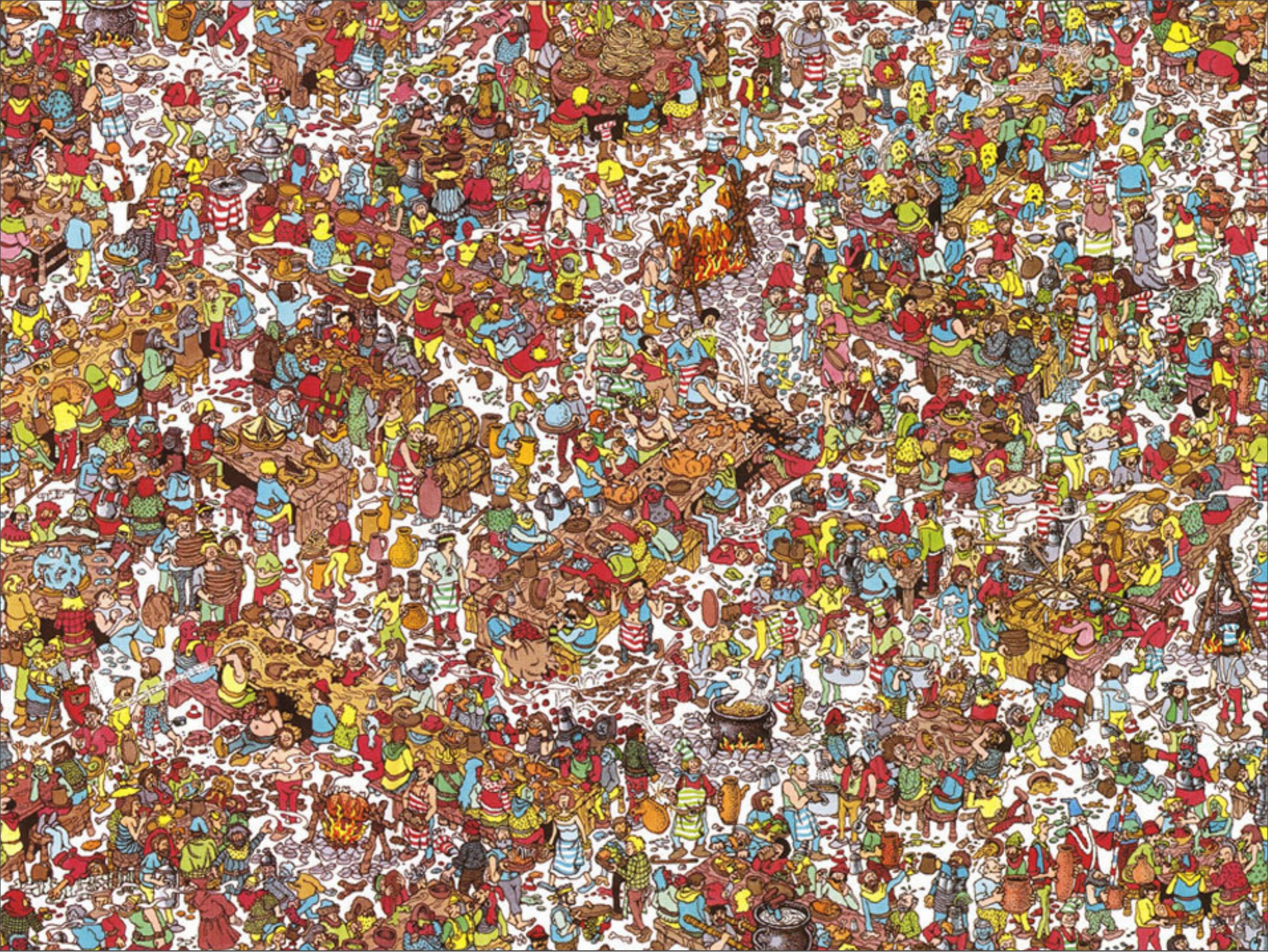
1545



Relay #70 Panel F
 (moth) in relay.

1625 1000 Arctangent started.
 1700 closed down.

The problem is
finding the bug



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SAN FRANCISCO, CALIFORNIA
JUNE 28 & 29, 2012
events.jquery.org

Interactions

- [Draggable](#)
- [Droppable](#)
- [Resizable](#)
- [Selectable](#)
- [Sortable](#)

Widgets

- [Accordion](#)
- [Autocomplete](#)
- [Button](#)
- [Datepicker](#)
- [Dialog](#)
- [Progressbar](#)
- [Slider](#)
- [Tabs](#)

Autocomplete

Theme: UI lightness ▾

[New window](#)

Examples

- [Default functionality](#)
- [Remote datasource](#)
- [Remote with caching](#)
- [Remote JSONP datasource](#)
- [Scrollable results](#)
- [Combobox](#)
- [Custom data and display](#)
- [XML data parsed once](#)
- [Categories](#)
- [Accent folding](#)
- [Multiple values](#)
- [Multiple, remote](#)

Tags:

What has to work...

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- JavaScript enabled

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- jQuery Loaded

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- jQuery Loaded
- jQuery UI Loaded

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- Have to ensure your setup options match what the control needs

What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete
- Have to ensure your setup options match what the control needs
- Have to ensure your data source (which is probably remote) is working right

Lots of Opportunities



The First
Bug
is one you
probably don't
know you have



Can you spot the bug?

Myspace | Social Entertainment

myspace | Social Entertainment

http://www.myspace.com/

myspace Sign up Login Search People Music Video Games Browse People

Enter today with an existing YouTube video link, for a chance to win up to \$25,000 and open for a National Act!

2011 WAS BIG NATIONAL ACTS INCLUDED: PLAIN WHITE T'S

FANS CAN ENTER FOR A CHANCE TO WIN AWESOME PRIZES

Charter CENTER STAGE BATTLE OF THE BANDS

CHARTER INTERNET SPEEDS UP TO 30 MBPS \$29.99/mo for 12 mos

Restrictions apply. LEARN MORE

MYSPACE MUSIC PLAYER LAUNCH

TOP HIP HOP PLAYLIST Chris Brown & Usher get along on this playlist

SEEKING A FRIEND FOR THE END OF THE WORLD 'Who's More Likely To' with Steve Carell, Keira Knightley & the cast WATCH ▶

Sign up free Already a member? Login OR Connect with Facebook Raymond Camden, Ryan Vikander and Mike Andler use Myspace.

NEW MYSPACE PLAYLISTS

MUSIC SONG CHARTS

MUSIC VIDEO CHARTS

MUSIC NEWS Open Player WHAT'S HOT AROUND HERE

The screenshot shows the MySpace homepage from June 2011. The top navigation bar includes links for 'Sign up', 'Login', 'Search People', 'Music', 'Video', 'Games', and 'Browse People'. Below the navigation is a banner for a contest where users can enter with a YouTube video link to win up to \$25,000. Another banner for '2011 WAS BIG' features the band Plain White T's. To the right, there's an advertisement for Charter Internet with speeds up to 30 Mbps for \$29.99/mo for 12 months. The main content area has sections for 'TOP HIP HOP PLAYLIST' (featuring Chris Brown and Usher) and 'SEEKING A FRIEND FOR THE END OF THE WORLD' (featuring Steve Carell and Keira Knightley). On the right, there's a 'Sign up free' button, social media integration with Facebook, and a section showing users who use MySpace. At the bottom, there are links for 'NEW MYSPACE PLAYLISTS', 'MUSIC SONG CHARTS', and 'MUSIC VIDEO CHARTS'."/>

Thursday, June 28, 12

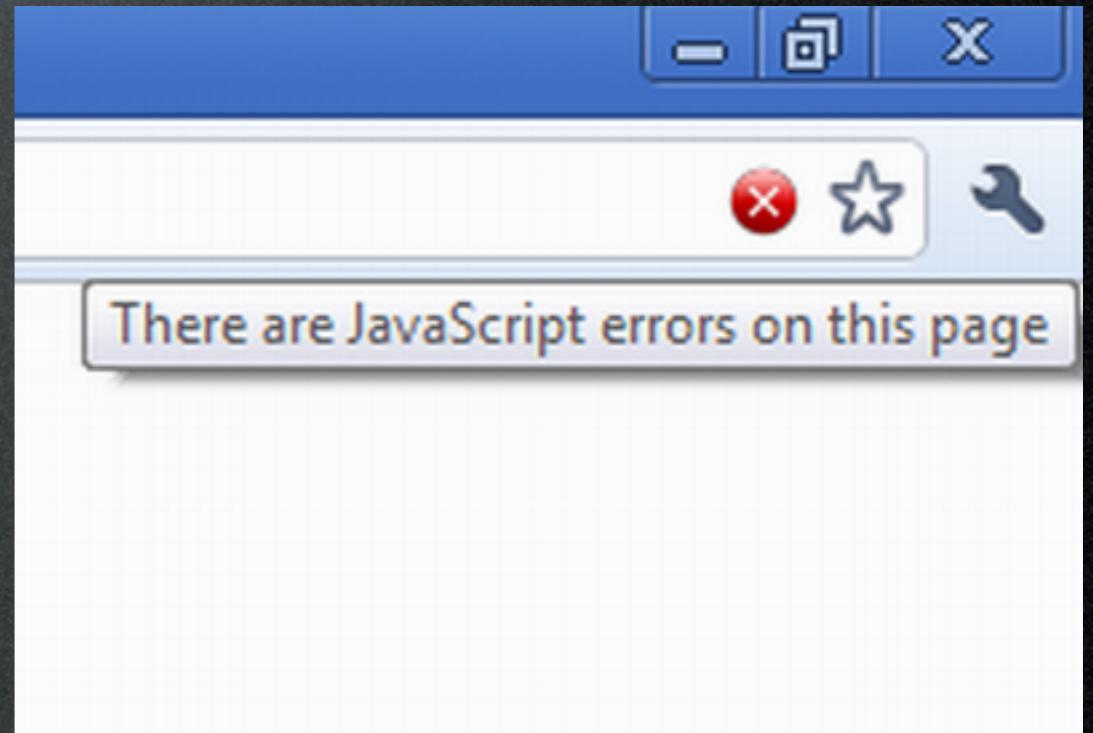


Being Proactive

- Checking the tools we're going to cover later
- Unit Testing

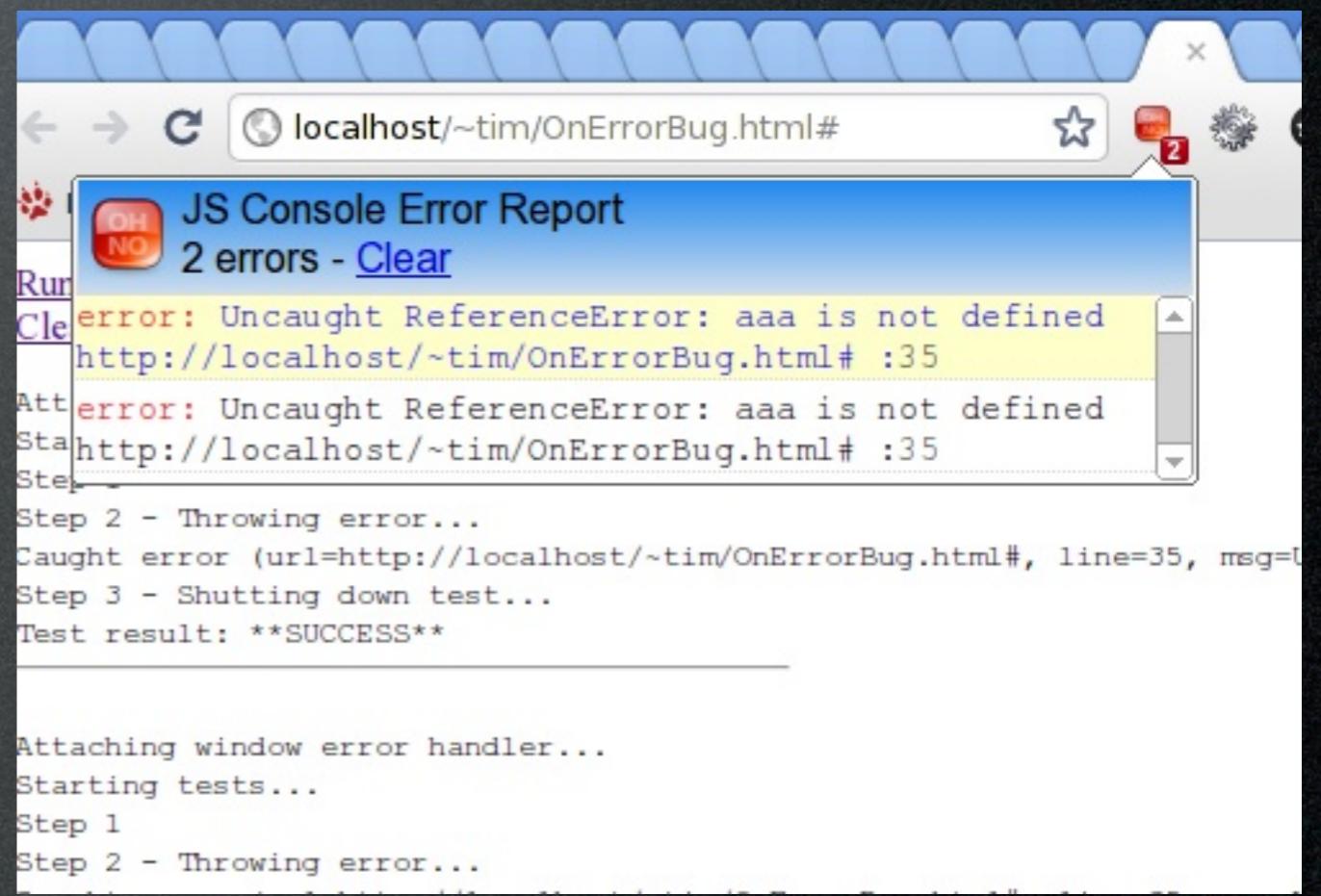
Chrome Extensions

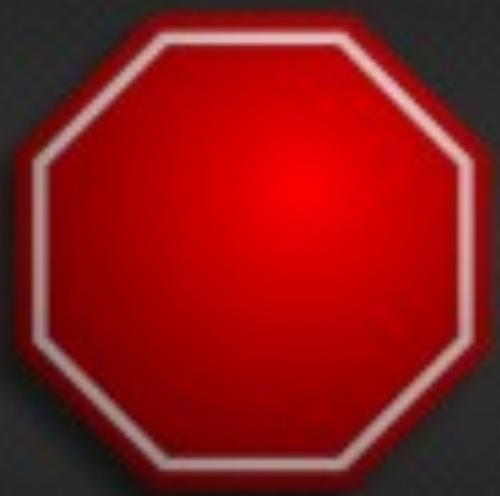
- javascript-error-notifier
- <http://code.google.com/p/javascript-error-notifier/>



Chrome Extensions

- jsError
- <https://github.com/schm erg/JsError>





{errorception}

- <http://errorception.com/>
- 30 day trial
- \$5 plan that reports up to 500 errors
- Works via simple embed

{errorception}

Showing all errors

Access is denied.

On line 18 of <https://apis.google.com/js/plusone.js> on 139 different pages.

 255 occurrences this week

 Seen in 2 different versions of Internet Explorer. Last seen 3 minutes ago. Occurred 255 times so far. Occurred before page load.

Отказано в доступе.

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 2 occurrences this week

 Seen in Internet Explorer 9. Last seen 33 minutes ago. Occurred 2 times so far. Occurred before page load.

window.frames.print_frame_D1897B91BF2BEB0CBCEDA700AAF476C4 is...

 1 occurrence this week

In an inline script on <http://www.raymondcamden.com/index.cfm/2011/4/5/Collapsible-content>...

 Seen in Firefox 13. Last seen 3 hours ago. Occurred once so far. Occurred after page load.

Accès refusé.

 14 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 11 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 14 times so far. Occurred before page load.

הגישה נדחתה.

 1 occurrence this week

On line 18 of <https://apis.google.com/js/plusone.js> on 1 page.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred once so far. Occurred before page load.

Åtkomst nekad.

 2 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 2 times so far. Occurred before page load.

Toegang geweigerd.

 8 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 6 different pages.

Access is denied.

Where

[Line 18 in https://apis.google.com/js/plusone.js](#)

Note: Line numbers may not be too useful in IE. Curse it!

Browsers

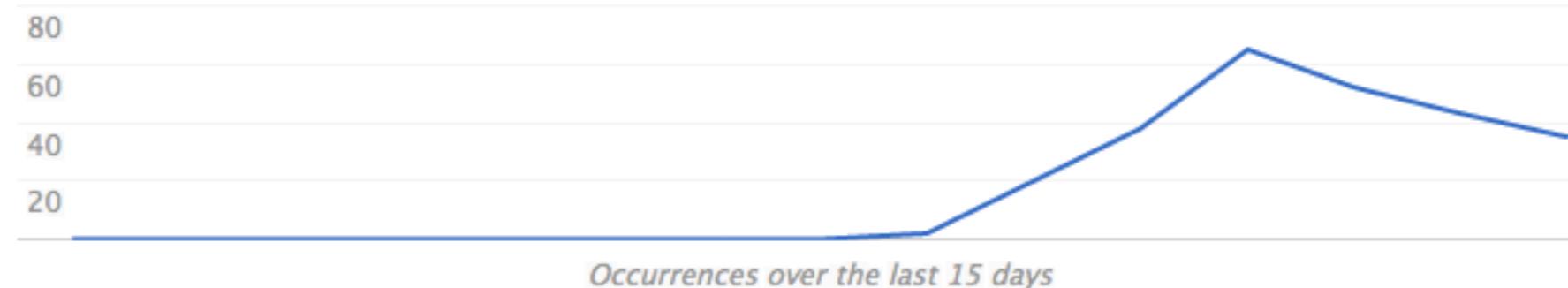


When

Before page load

Occurrences

255 total occurrences. First seen 6 days ago. Last seen 5 minutes ago.



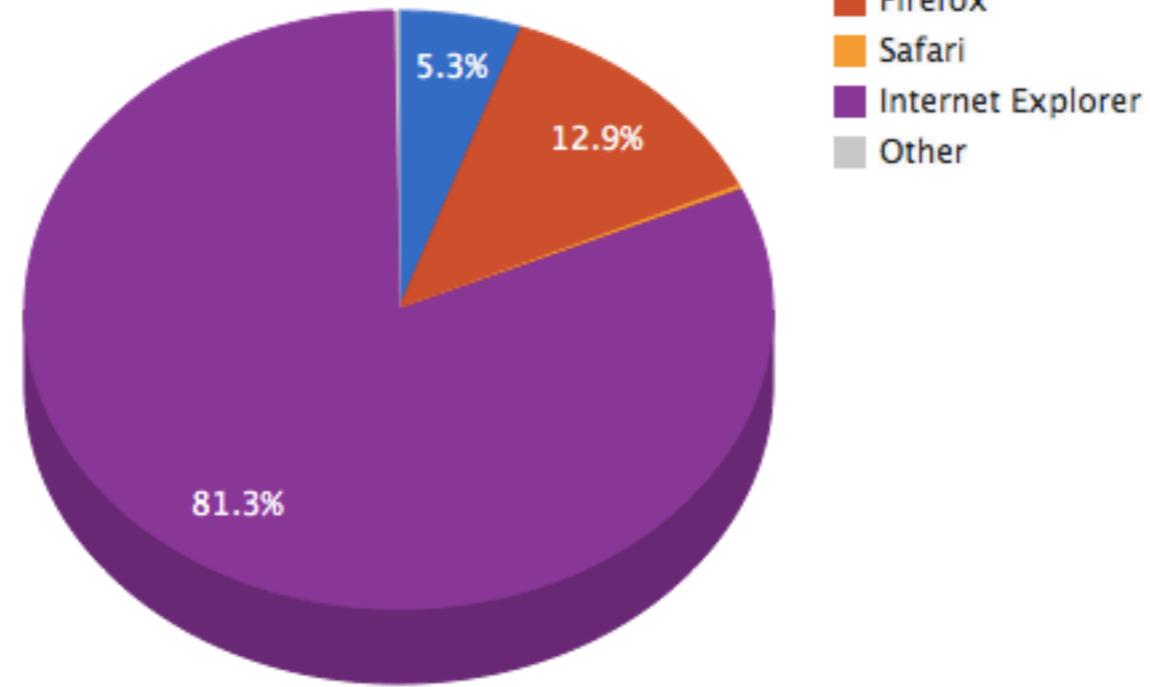
On pages

<http://www.raymondcamden.com/index.cfm/2011/4/3/Example-of-jQuery-Mobile-...>
<http://www.raymondcamden.com/index.cfm/2011/3/9/Adding-driving-directions-t...>
<http://www.raymondcamden.com/index.cfm/2012/1/19/Downloading-files-to-a-Ph...>
<http://www.raymondcamden.com/index.cfm/2009/2/10/An-Introduction-to-jQuery...>
<http://www.raymondcamden.com/index.cfm/2007/7/26/Getting-a-page-from-a-P...>
<http://www.raymondcamden.com/index.cfm/2012/6/11/ColdFusion-Developer-Wee...>
<http://www.raymondcamden.com/index.cfm/2009/11/17/Looking-For-Writing-Cold...>
<http://www.raymondcamden.com/index.cfm/2009/2/9/An-introduction-to-jQuery-...>

Graphs



Browsers



■ Chrome
■ Firefox
■ Safari
■ Internet Explorer
■ Other

Browsers	Errors
Internet Explorer	993
Firefox	157
Chrome	65
Safari	3
Chromium	1
iPad	1
RockMelt	1
Total	1221

You've got a bug, now what?

- Learn your browser tools
- It doesn't necessarily matter if it's not your standard browser
- And guess what - you can use more than one (really)

Chrome Dev Tools

- Wrench -> Tools -> Developer Tools
- Keyboard combo
- Run at bottom, right, detached



What we care about...

- Console
- Network
- Elements
- Scripts/Sources
- Resources

Console

- Errors show up here
- You can run commands here as well as code in your page
- You can view log messages here

console API

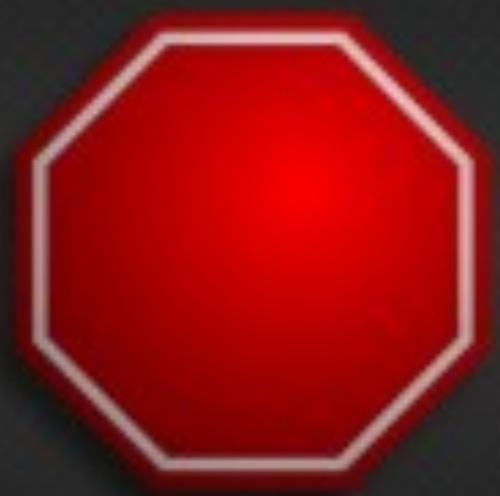
- Your code can send messages to the console
- I use the heck out of this
- No, really, I make logs like a lumberjack

console API

- [http://getfirebug.com/wiki/index.php/
Console_API](http://getfirebug.com/wiki/index.php/Console_API)
- **log**, error, warn, info, count, debug,
profileend, trace, dir, dirxml, assert,
time, profile, timeEnd, group,
groupEnd

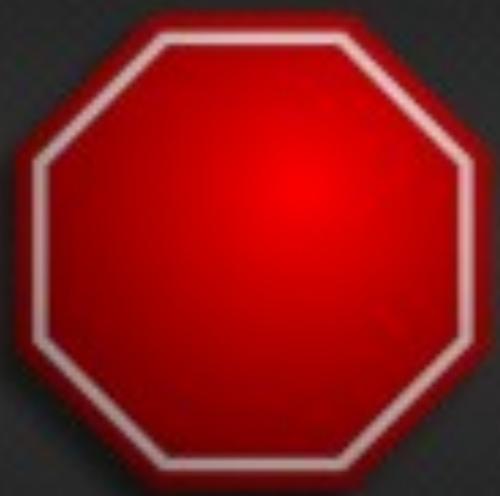
console.log

- `console.log("this works");`
- `console.log("What is X "+x);`
- `console.log("X",x);`
- `console.log(object);`



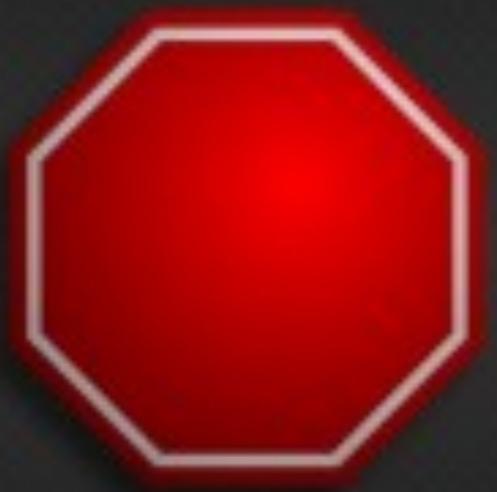
console.dir

- Dumps an object
- Great for introspecting remote data
- Firebug does it nicer (a bit)



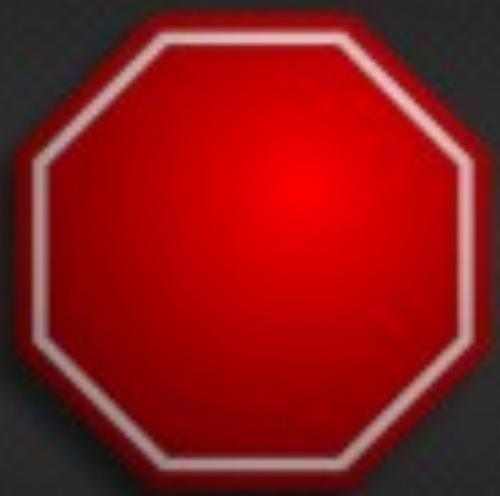
Network Requests

- Check the output
- Check **all** the output
- Look for things like redirects on session timeout
- JSON/P is a bit different



Elements

- Handy for looking at your DOM
- Which may be dynamic (ColdFusion, Ruby, PHP, etc)
- Which may be dynamic (JavaScript)

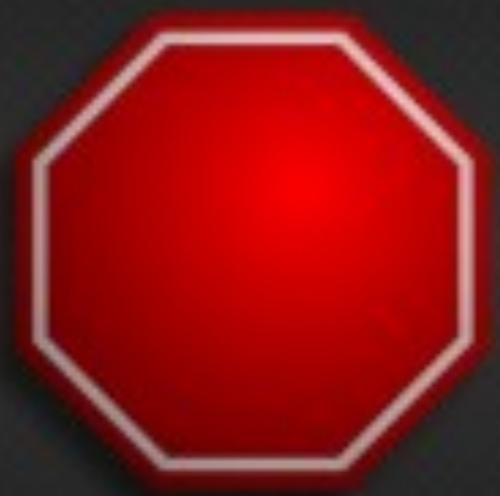


Scripts/Sources

- List of all the scripts on your page
- This is your debugger
- (p.s. note the stop on error magic trick)

Debugger Key Terms

- Breakpoints
 - Specific
 - Dynamic
- DOM Change, XHR, Events
- Stepping
 - Multiple ways to progress



Resources

- Cookies, Databases, IndexedDB, Local (and Session) Storage, Application Cache
- As well as HTML, JS, CSS

The Last Resort



OVERCONFIDENCE

This is going to end in disaster, and you have no one to blame but yourself.